CLAIMS AMENDMENTS:

Please amend Claims 1 and 10 to 15, as follows:

1. (Currently Amended) A displacement detection apparatus comprising:

a light beam illuminating system that converts a linearly polarized light beam emitted from a light emitting element into a substantially parallel light beam; ~~and that irradiates a relatively moving object with the light beam through~~

a light beam splitting optical system; ~~said light beam splitting optical system having an optical anisotropy and splitting the single~~ that splits the parallel light beam emerging from said light beam illuminating system into a plurality of polarized light beams having different polarized states;

a focusing optical system that focuses the plurality of split light beams to different positions ~~close to each other~~ which are spatially separated from one another on a surface of ~~the~~ a relatively moving object;

a polarizing prism that splits reflected light beams from the relatively moving object on the basis of a difference between the plurality of directions of polarization, wherein said reflected light beams are matched by said light beam splitting optical system;

a plurality of light receiving optical systems that individually detect the different polarized light beams split by said polarizing prism and output light receiving signals of the respective light beams; and

a comparator that compares light receiving signal levels of the respective light beams to detect a relative displacement of the relatively moving object.

2. (Original) An apparatus according to claim 1, wherein said light beam splitting optical system has an optical performance capable of splitting the light beam

emerging from said light emitting element and, at positions where the light beams are focused by said focusing optical system, spatially separating the focusing positions of the focused light beams.

3. (Original) An apparatus according to claim 2, wherein the surface of the relatively moving object is substantially vertically irradiated with the plurality of focused light beams.

4. (Original) An apparatus according to claim 1, wherein a slit-shaped marking or a three-dimensional marking is formed on the surface of the relatively moving object to generate a reflectance difference.

5. (Original) An apparatus according to claim 4, wherein said light beam splitting optical system has an optical characteristic with which the focusing positions of the plurality of focused light beams are spatially separated at an interval almost equal to a width of the marking.

6. (Original) An apparatus according to claim 1, wherein said light beam splitting optical system has a parallel plate shape.

Claim 7 (Cancelled).

8. (Previously Presented) An apparatus according to claim 1, wherein said light beam splitting optical system is a crystal optical element.

9. (Previously Presented) An apparatus according to claim 1, wherein a boundary portion is formed on the surface of the relatively moving object to generate a reflectance difference.

10. (Currently Amended) A magnetic recording apparatus comprising:

a displacement detection apparatus comprising:

a light beam illuminating system that converts a linearly polarized light beam emitted from a light emitting element into a substantially parallel light beam; ~~and irradiates a relatively moving object with the light beam through~~

a light beam splitting optical system, ~~said light beam splitting optical system having an optical anisotropy and splitting~~ that splits the single parallel light beam emerging from said light beam illuminating system into a plurality of polarized light beams having different polarized states;

a focusing optical system that focuses the plurality of split light beams to different positions ~~close to~~ which are spatially separated from one ~~other~~ another on a surface of ~~the~~ a relatively moving object;

a polarizing prism that splits reflected light beams from the relatively moving object on the basis of a difference between the plurality of directions of polarization, wherein said reflected light beams are matched by said light beam splitting optical system;

a plurality of light receiving optical systems that individually detect the different polarized light beams split by said polarizing prism and output light receiving signals of the respective light beams; and

a comparator that compares light receiving signal levels of the respective light beams to detect a relative displacement of the relatively moving object,

wherein a slit-shaped marking or a three-dimensional marking is formed on the surface of the relatively moving object to generate a reflectance difference;

a head arm having the marking or reflectance boundary portion formed on an upper surface;

a rotary positioner having said displacement detection apparatus on a rotary arm; and

a head arm drive motor control unit that controls a current of a head arm drive motor of a hard disk drive to synchronize a motion of said rotary positioner with a motion of said head arm so that an output from said displacement detection apparatus becomes constant as a position of said rotary positioner varies.

11. (Currently Amended) A rotary encoder comprising:

a displacement detection apparatus comprising:

a light beam illuminating system that converts a linearly polarized light beam emitted from a light emitting element into a substantially parallel light beam; ~~and irratdiates a relatively moving object with the light beam through~~

a light beam splitting optical system, ~~said light beam splitting optical system having an optical anisotropy and splitting~~ that splits the single parallel light beam emerging from said light beam illuminating system into a plurality of polarized light beams having different polarized states;

a focusing optical system that focuses the plurality of split light beams to different positions ~~close to~~ which are spatially separated from one ~~other~~ another on a surface of ~~the~~ a relatively moving object;

a polarizing prism that splits reflected light beams from the relatively moving object on the basis of a difference between the plurality of directions of polarization, wherein said reflected light beams are matched by said light beam splitting optical system;

a plurality of light receiving optical systems that individually detect the different polarized light beams split by said polarizing prism and output light receiving signals of the respective light beams; and

a comparator that compare light receiving signal levels of the respective light beams to detect a relative displacement of the relatively moving object,

wherein a slit-shaped marking or a three-dimensional marking is formed on the surface of the relatively moving object to generate a reflectance difference;

wherein the slit-shaped marking or reflectance boundary portion is formed on a rotary disk surface; and

wherein said displacement detection apparatus is provided on a fixed object side to receive the plurality of reflected light beams from the marking or reflectance boundary portion on a moving scale and to detect a scale origin from a difference signal between the plurality of light receiving signals.

12. (Currently Amended) A linear encoder comprising:

a displacement detection apparatus of comprising:

a light beam illuminating system that converts a linearly polarized light beam emitted from a light emitting element into a substantially parallel light beam~~; and irradiates a relatively moving object with the light beam through~~

a light beam splitting optical system~~, said light beam splitting optical system having an optical anisotropy and splitting~~ that splits the single parallel light beam emerging from said light beam illuminating system into a plurality of polarized light beams having different polarized states;

a focusing optical system that focuses the plurality of split light beams to different positions ~~close to~~ which are spatially separated from one ~~other~~ another on a surface of ~~the~~ a relatively moving object;

a polarizing prism that splits reflected light beams from the relatively moving object on the basis of a difference between the plurality of directions of polarization, wherein said reflected light beams are matched by said light beam splitting optical system;

a plurality of light receiving optical systems that individually detect the different polarized light beams split by said polarizing prism and output light receiving signals of the respective light beams; and

a comparator that compares light receiving signal levels of the respective light beams to detect a relative displacement of the relatively moving object,

wherein a slit-shaped marking or a three-dimensional marking is formed on the surface of the relatively moving object to generate a reflectance difference;

wherein the slit-shaped marking or reflectance boundary portion is formed on a linear encoder scale surface, and

wherein said displacement detection apparatus is provided on a moving object side to receive the plurality of reflected light beams from the marking or reflectance boundary portion on the linear encoder scale and to detect a scale origin from a difference signal between the plurality of light receiving signals.

13. (Currently Amended) A magnetic recording apparatus comprising:

a displacement detection apparatus comprising:

a light beam illuminating system that comvers a linearly polarized light beam emitted from a light emitting element into a substantially parallel light beam; ~~and~~

~~irradiates a relatively moving object with the light beam through~~

a light beam splitting optical system~~, said light beam splitting optical system having an optical anisotropy and splitting~~ that splits the single parallel light beam emerging from said light beam illuminating system into a plurality of polarized light beams having different polarized states;

a focusing optical system that focuses the plurality of split light beams to different positions ~~close to~~ which are spatially separated from one ~~other~~ another on a surface of ~~the~~ a relatively moving object;

a polarizing prism that splits reflected light beams from the relatively moving object on the basis of a difference between the plurality of directions of polarization, wherein said reflected light beams are matched by said light beam splitting optical system;

a plurality of light receiving optical systems that individually detect the different polarized light beams split by said polarizing prism and output light receiving signals of the respective light beams; and

a comparator that compare light receiving signal levels of the respective light beams to detect a relative displacement of the relatively moving object,

wherein a boundary portion is formed on the surface of the relatively moving object to generate a reflectance difference;

a head arm having the marking or reflectance boundary portion formed on an upper surface;

a rotary positioner having said displacement detection apparatus on a rotary arm; and

a head arm drive motor control unit that controls a current of a head arm drive motor of a hard disk drive to synchronize a motion of said rotary positioner with a motion of said head arm so that an output from said displacement detection apparatus becomes constant as a position of said rotary positioner varies.

14. (Currently Amended) A rotary encoder comprising:

a displacement detection apparatus comprising:

a light beam illuminating system that converts a linearly polarized light beam emitted from a light emitting element into a substantially parallel light beam; ~~and irradiates a relatively moving object with the light beam through~~

a light beam splitting optical system, ~~said light beam splitting optical system having an optical anisotropy and splitting~~ that splits the single parallel light beam emerging from said light beam illuminating system into a plurality of polarized light beams having different polarized states;

a focusing optical system that focuses the plurality of split light beams to different positions ~~close to~~ which are spatially separated from one ~~other~~ another on a surface of ~~the~~ a relatively moving object;

a polarizing prism that splits reflected light beams from the relatively moving object on the basis of a difference between the plurality of directions of polarization, wherein said reflected light beams are matched by said light beam splitting optical system;

a plurality of light receiving optical systems that individually detect the different polarized light beams split by said polarizing prism and output light receiving signals of the respective light beams; and

a comparator that compares light receiving signal levels of the respective light beams to detect a relative displacement of the relatively moving object,

wherein a boundary portion is formed on the surface of the relatively moving object to generate a reflectance difference;

wherein the slit-shaped marking or reflectance boundary portion is formed on a rotary disk surface, and

wherein said displacement detection apparatus is provided on a fixed object side to receive the plurality of reflected light beams from the marking or reflectance

boundary portion on a moving scale and to detect a scale origin from a difference signal between the plurality of light receiving signals.

15. (Currently Amended) A linear encoder comprising:

a displacement detection apparatus comprising:

a light beam illuminating system that converts a linearly polarized light beam emitted from a light emitting element into a substantially parallel light beam; ~~and irradiating a relatively moving object with the light beam through~~

a light beam splitting optical system, ~~said light beam splitting optical system having an optical anisotropy and splitting~~ that splits the single parallel light beam emerging from said light beam illuminating system into a plurality of polarized light beams having different polarized states;

a focusing optical system that focuses the plurality of split light beams to different positions ~~close to~~ which are spatially separated from one ~~other~~ another on a surface of ~~the~~ a relatively moving object;

a polarizing prism that splits reflected light beams from the relatively moving object on the basis of a difference between the plurality of directions of polarization, wherein said reflected light beams are matched by said light beam splitting optical system;

a plurality of light receiving optical systems that individually detect the different polarized light beams split by said polarizing prism and output light receiving signals of the respective light beams; and

a comparator that compares light receiving signal levels of the respective light beams to detect a relative displacement of the relatively moving object,

wherein a boundary portion is formed on the surface of the relatively moving object to generate a reflectance difference;

wherein the slit-shaped marking or reflectance boundary portion is formed on a linear encoder scale surface, and

wherein said displacement detection apparatus is provided on a moving object side to receive the plurality of reflected light beams from the marking or reflectance boundary portion on the linear encoder scale and to detect a scale origin from a difference signal between the plurality of light receiving signals.

16. - 20. (Cancelled)